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ABSTRACT

The themes that emerge from a review of the literature on continuing education (CE) in the health professions fail either to describe the CE phenomenon adequately or to explain the disappointing results reported from CE evaluation studies. This represents a simplistic and incomplete view of CE and the effects of CE experiences. The major objective of this project was to develop a conceptual framework for the planning and evaluation of CE in the health professions that was based on a more complete understanding of the components of CE and an open systems view for describing outcome data. The initial step of this process was the critical analysis of the complex concept of CE using Guttman's facet theory and mapping sentence technique. This was followed by the integration of the conceptual definition of CE with a system view of human behavior based on the work of Brunswik. The model presented might be useful in the planning of CE experiences to insure that potential anticipated outcomes are realistic for the type (category) of program developed. In addition, using the model to design CE impact evaluation studies can help identify a range of questions to ask and thereby suggest to the evaluator appropriate data collection strategies. Finally, it might be useful to apply the model to the analysis of impact data collected as a way to bring to light information that can explain the mismatch between potential and actual program outcomes that is often reported in the literature. (KC)

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# A Conceptual Framework for Planning and Evaluating Continuing Education in the Health Professions

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Health care professionals in practice are assumed to be competent. A way or means adopted by health care professions to insure the continued competency of their practitioners is to encourage and in some cases mandate that they accumulate a prescribed number of continuing education (CE) hours per year in order to maintain certification or licensure. This has made possible the creation of a major CE industry which provides a plethora of courses, programs and materials in formats ranging from self-instruction to tele-conference. It has also resulted in a body of literature that describes CE and reports on its effectiveness for maintaining competency.

## Review of the Literature

Key themes emerge from a review of the literature on CE in the health professions. The first is that the implicit desired outcome of CE is improved patient care. Gosnell (1984:10) states that mandating CE for relicensure "implies that continuing education assures continued competence and will result in desired patient outcomes." In an effort to understand and evaluate CE, Dixon (1978) illustrates a causal chain which begins with CE and ends with changes in patient outcomes. Sanazaro (1983) and Baker

(1983), in their reviews of quality assurance, refer to CE as one of its integral components. This assumption of CE affords it much credibility as well as demands accountability to validate the assumption.

CE evaluation literature indicates disappointing results in terms of CE's effect on improved patient care. The review of Lloyd and Abrahamson (1979) is a classic example of this second theme. Gosnell (1984) also lends support to this theme in the review of CE evaluation studies in which reported results were not conclusive as to the effects of the CE experiences studied.

Notably, CE evaluation studies generally focus on outcomes while disregarding the intended objectives and content of the program, the participants themselves or the setting where the CE material is to be applied. This focus on outcome is the third major theme in the CE literature. It implies that all CE can be spoken of and studied generically and separate from the environment in which its impact is intended to be felt. Although this and the other two themes are consistent in the literature, the authors of this paper believe these themes present a simplistic and incomplete view of continuing professional education in general and CE in the health professions specifically.

Objectives of the Project

Two of the authors are continuing education specialists from the Triton College Continuing Education Center for Health

Professionals. This center develops or consults to provide more than 250 CE programs yearly for the health professionals in Illinois with more than 10,000 participants annually attending these programs. The experience of these authors spans all phases of program development with more than 15 health professions and indicates that it is necessary to look beyond the themes described in the literature to adequately discuss CE. This experience shows that 1) the potential and actual outcomes of CE are largely dependent on the type of CE developed; 2) CE cannot be viewed generically in designing an evaluation plan; 3) CE and its outcomes can only be understood when viewed as part of a system which includes the participants and their professional environment. The work of Stein (1981) and Sanazaro (1983) lend support to this last observation.

Based on such knowledge the major objective of this project was to develop a conceptual framework for the planning and evaluation of CE in the health professions which incorporated an open systems view. An integration of pertinent psychological and sociological theory to this problem was a secondary objective. In particular, Guttman's facet theory, a way to conceptualize a phenomenon, and Brunswik's work which conceptualizes human behavior as a function of the environment in which it takes place were utilized.

Development of the Model

The project was conducted in two separate but related steps. The initial step was the critical analysis of the concept

"continuing education" using Guttman's facet theory and mapping sentence technique (Shye, 1978). The second step was to integrate this conceptual definition with a systems view of human behavior.

The concept of "continuing education" is a highly complex interplay of multiple dimensions. Guttman's facet theory and mapping sentence technique offer a concise, useful method for analyzing this concept. In Guttman's theory, a facet is a label for an important aspect of a concept. Each facet or label is delimited in such a way that a meaningful range of elements is created for the label (Shye, 1978). A mapping sentence is a means to delineate a multi-variate concept by describing the components which constitute the concept. It consists of facets and connecting phrases which ultimately define and give unity to the contents of the concept (Shye, 1978).

The mapping sentence developed to analytically describe CE is shown in Figure 1 with the facets labeled A-J. Each facet is delimited by its range of options (facet elements). The facets included in the mapping sentence and the facet options described were determined through a synthesis of current literature on CE and from the experience of the project coordinators. For example facet D is Intended Audience. This facet is delimited by its range of options (facet elements): single profession, generic (e.g., nursing); single profession, specialty (e.g., critical care nurses); multiple profession, generic (e.g., nursing, medical technology); multiple profession, specialty (e.g., infection control nurses, microbiologists). Selection of one

specific facet element from each facet A-I of the mapping sentence in Figure 1 formulates specific categories of CE programming. Each category determines its own set of potential outcomes (facet J). Using this technique, the universe of possible CE program alternatives can be separated into distinct categories with distinct potential outcomes.

Four contrasting examples of CE categories derived from the mapping sentence are illustrated in Figure 2 and show that potential outcomes (indicated by a +) are different for each. These outcomes are based on a best estimation of projected and possible outcomes given the individual category of CE. It is demonstrated through this technique then, that not all CE necessarily is designed to have nor can have impact on patient care, which perhaps explains the disappointing and equivocal results documented in the literature.

It is important to note again that the CE literature has mainly focused on facet J in Figure 1, Potential Outcomes. Therein lies its weakness and limitations for it fails to systematically and explicitly take into account other important factors as delineated in facets A-I of the mapping sentence. The strength of the proposed view is that it focuses on the multiple unique aspects which combine to make CE and thereby broadens the researcher's myopic view of CE in the health professions.

The project next focused on examining this carefully defined CE concept as part of an environmental system. It has been argued that research in the health care professions, especially program evaluation, would benefit from a more ecological view of human

behavior (Sanazaro, 1983). Brunswik's conception of human behavior offered a unique strength in that it provided a means to understand the dynamics of the environment including the participant-to-environment relationship.

Brunswik's theory, described and adapted by Hammond (1980) and Petrinovich (1979) and integrated with this proposed conceptualization of CE, suggests a series of four "lenses" through which human behavior is mediated. These "lenses" include: individual participant perceptions, cultural perceptions and mores, professional standards of practice and organizational standards and demands. The "lenses" allow one to hypothesize differential program outcomes. For example, consider the potential difference in outcomes for a nurse interested in gaining physical assessment skills who is sent to attend CE on the topic due to a hospital need for her to acquire the skill versus a nurse with the same interest who attends the same CE program even though her job responsibilities do not include the skill. It can be argued that in any category of CE, defined through facet option selection, as the convergence of the four "lenses" increases so does the focus of the "lens system". This metaphor suggests that as the focus of the "lens system" increases the potential of realizing the expected outcomes of the CE category also increases.

The synthesis of Guttman's and Brunswik's thinking as applied to the CE phenomenon is the Conceptual Framework for Planning and Evaluating Continuing Education in the Health Professions illustrated in Figure 3. The remainder of this paper

will focus on the applications and implementation of this framework as well as implications for further study.

Application of the Model

The framework illustrated in Figure 3, for purposes of discussion, is divided into 3 sections: Program Development and Selection, Program Site Effects, Participant Work Site Effects. Applications of each section of the framework and the framework as a whole are presented.

The Program Development and Selection component provides information useful to program developers and users of CE. In the context of Guttman's theory, it is possible to a priori estimate (or predict) what potential outcomes exist for a CE program based on the category the program is part of as defined by the mapping sentence. CE program developers can incorporate this information into their planning process to more effectively design CE experiences that have realistic intended outcomes. As a result, developing programs at different learning levels and tracking through a content area with several programs become appropriate approaches to potentially achieve different outcomes.

Users of CE, in this discussion, include the participants who self-select programs to attend and managers and supervisors who allocate CE funds. Both can utilize accurate outcome information to select programs that best match their individual or departmental needs. This makes optimal use of both the time and money necessary to attend CE. This is especially important in the current financially strained health care system.

It has been demonstrated that a major application of the Program Development and Selection component is the development of realistic potential expected outcomes from a CE program. The actual outcomes of the program are first observable and measureable at the completion of the offering. This introduces the second component of the framework, Program Site Effects.

This component applies the four "lenses" previously described to provide evaluators with a means for understanding the actual outcomes observed and measured when compared to the potential expected outcomes of the program. In this way the human behavior demonstrated is described and understood in the context of individual participant perceptions and environmental constraints. It is suggested that the outcomes observed and measured are unique to each participant because the operation of the "lenses" allows for that individuality. In addition, it is suggested that at the program site the individual "lens" and cultural perceptions and mores "lens" may affect a greater influence on the behavior demonstrated than the professional standards of practice "lens" and organizational standards and demands "lens" might have at this time.

To demonstrate this we can again utilize our example of the two nurses interested in gaining physical assessment skills; for Nurse A these skills are required for the work position, for Nurse B they are not. Measurement of the attainment of the potential expected outcomes of the same physical assessment skills course for each of the nurses is illustrated in Figure 4. As the data suggest the actual outcomes at the program site are

similar, but not identical. The authors submit that this is possible because the interest in the topic for both participants was high, but the knowledge of each participant concerning future application was different which mediated the behavior each demonstrated.

Extending this example to the behavior demonstrated by the two nurses at their individual work sites allows for discussion of the final component of the framework, Participant Work Site Effects. The "lenses" applied in this setting again provide information to assist evaluators in understanding the data they obtain.

Figure 4 indicates the effects that might be demonstrated at the work site for this example. It is shown that the effects are different for each participant, and that for Nurse B there is less evidence that potential outcomes were realized and in two major skills areas there is no evidence of the outcome.

Application of the "lens system" to this data supports the metaphor suggested previously that as the focus of the "lens system" increases the potential for realizing the expected outcomes of the CE experience also increases. For Nurse A the four "lenses" converged, i.e. the individual perceptions, cultural perceptions, professional standards of practice and organizational demands all supported the application of the physical assessment knowledge and skills obtained. Therefore, the match between potential outcomes and observed effects at the work site was positive. For Nurse B, there was divergence of the organizational demands "lens" from the other three; this was

influential enough to cause a mis-match between the potential outcomes and what was observed.

This example is consistent with many studies found in the literature, and might be considered worthwhile because actual measurements have been taken at the work site. However, the reported results of CE impact at the site would once again be disappointing and inconsistent. It is suggested that utlizing the "lens system" at the work site would provide additional data to explain empirically observed descrepancies between potential and actual outcomes. In this instance, it would have allowed the evaluator to ask questions to discover some reasons why all the intended program outcomes could not possibly have been observed at the work site of Nurse B.

The body of CE evaluation literature continues to grow and a systematic way to critically review the studies reported is required. Utilization of the mapping sentence and framework components offers such a methodology. The components of the mapping sentence provide an effective way to place the specific CE experience into an appropriate analytical category which allows assessment of the accuracy and realism of the stated outcomes. The framework then affords a means to assess the outcome data reported from that particular experience. Unfortunately, much of the information necessary to utilize this methodology is generally not presented in the literature. The authors believe this further illustrates the need for more complete analysis and description of the CE phenomenon.

Educators and evaluators can utilize the mapping sentence as a systematic way to design studies to compare specific CE experiences. Additionally, the framework provides a useful guide for the design of empirical evaluation studies on the effects of CE. Together these will generate data that inform the question of what types of programs must be developed to potentially achieve desirable outcomes such as improved patient care and continued professional competency, as well as documentation of reasons for whether or not these outcomes are realized at the work site.

Professional associations can apply the mapping sentence and framework information to more effectively guide their practitioners in CE selections. This might assist in the establishment of standards for mandatory CE attendance based on an optimal match of the CE experience to the personal and professional needs of the pracitioner as well as standards of practice and organizational demands.

## Discussion and Implications for Further Study

The process of developing a conceptual framework for planning and evaluating CE in the health professions affirms the field experience of the authors. Potential outcomes of any CE experience are largely dependent upon the specific type of experience. Simply, not all CE is intended to make a direct impact on patient care. This does not minimize its true effects, but only suggests further research is necessary to learn what real effects can be expected.

Evaluation of CE cannot be focused solely on outcome data without taking into account the type of CE experience and the information obtained through using the "lens system" to understand the behavior demonstrated. Comparison studies between types of CE experience for the same content may be an appropriate way to begin to understand how CE can be manipulated to truly effect a change in practice or maintain competency.

Evaluation studies of CE effectiveness that utilize the components of the proposed framework are needed. To accurately assess effects of CE the participants must be followed through specific CE experiences to their work sites. While this is a costly and time consuming approach, it is necessary to begin to provide substantial data in this area for CE planners and users. The emphasis currently on cost-containment and quality assurance in health care provides a rich background for the initiation of such studies. An empirical study designed as part of existing quality assurance programs at clinical sites seems an effective approach.

Further research into the composition and operation of the "lens system" is needed, as is more in-depth work with the mapping sentence. Utilization of the framework to design an evaluation study is the next critical step which will allow further exploration in each of these areas.

Continuing education opportunities are desired by health care professionals, and their professional associations. Empirically this is supported by the number of participants who attend CE regularly. Some are mandated to do so, but most are

not. Motivation for attendance is well documented, but the results of that effort, time, and money, are neither documented nor sufficiently understood.

The authors argue that observed and measured effects are the result of a relationship between the CE experience, participant, and the environment, not merely from any single piece of this functional unit. The model presented affords a means for educators and evaluators of CE to gather data that allow a richer understanding of these effects through a more exacting knowledge of the dynamics of this unit.

Figure 1: A Mapping Sentence for Continuing Education

A continiung education program of | A. Actual Time* - one hour - one day - extended over weeks - etc. | given in

| B. Time Distribution - one shot - sequential | with | C. Follow-up - formal - informal - none | for | D. Intended Audience - single profession, generic - single profession, specialty - multiple profession, generic - multiple profession, specialty |

taught through | E. Instructional Method - experiential - didactic - multiple methods - etc. | at a | F. Program Level - basic - intermediate - advanced | with participants

from | G. Setting - open- multiple organization - limited-units in a single organization - closed-single unit single organization | with focus on | H. Content Area - Administration, education - Teaching, training - patient care, education - patient care, training - etc. | which

participants can use for | I. Career Staging - re-entry - maintenance - expansion - new career direction | can potentially produce | J. Potential Outcomes - Δ belief - Δ knowledge - Δ patient care - Δ etc. | .

* A-J are facets with their individual facet elements (options).

Figure 2: Sample Categories Derived from the Mapping Sentence

| CATEGORY FACETS | Ideal - Typical Categories 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| A. Actual Time in Program | 1 hour | 1 day ( 6 hours ) | 1 day ( 6 hours ) | 18 hours - over weeks |
| B. Time Distribution | 1 shot | 1 shot | sequential | sequential |
| C. Follow-up | none | none | none | none |
| D. Intended Audience | Single Profession, Generic Group | Single Profession, Generic Group | Multiple Professions, Specialty Group | Single Profession, Generic Group |
| E. Instructional Method | Didactic | Experiential | Experiential | Multiple Methods |
| F. Program Level | Basic | Basic | Basic | Basic |
| G. Setting | Open, multiple organizations | Open, multiple organizations | Limited, one organization | Open, multiple organizations |
| H. Content Area | Patient care - education | Patient care - training | Patient care- training | Patient care- training |
| I. Career Staging | Maintenance | Maintenance | Expansion | Expansion |
| J. Potential Outcomes[a] | | | | |
| Belief / Attitude | 0 | + | + | + |
| Client Wellness | + | + | + | + |
| Collegial Support | + | + | + | + |
| Knowledge | + | + | + | + |
| Patient Care Delivery | 0 | + | + | + |
| Practice - Application | 0 | + | + | + |
| Professional Growth | + | + | + | + |
| Sharing Professional Norms | 0 | 0 | + | 0 |
| Skills | 0 | + | + | + |
| etc. | (4) | (8) | (9) | (8) |

[a] + = possible 0 = not possible

Figure 3:

A CONCEPTUAL FRAMEWORK FOR PLANNING AND EVALUATING CE IN THE HEALTH PROFESSIONS

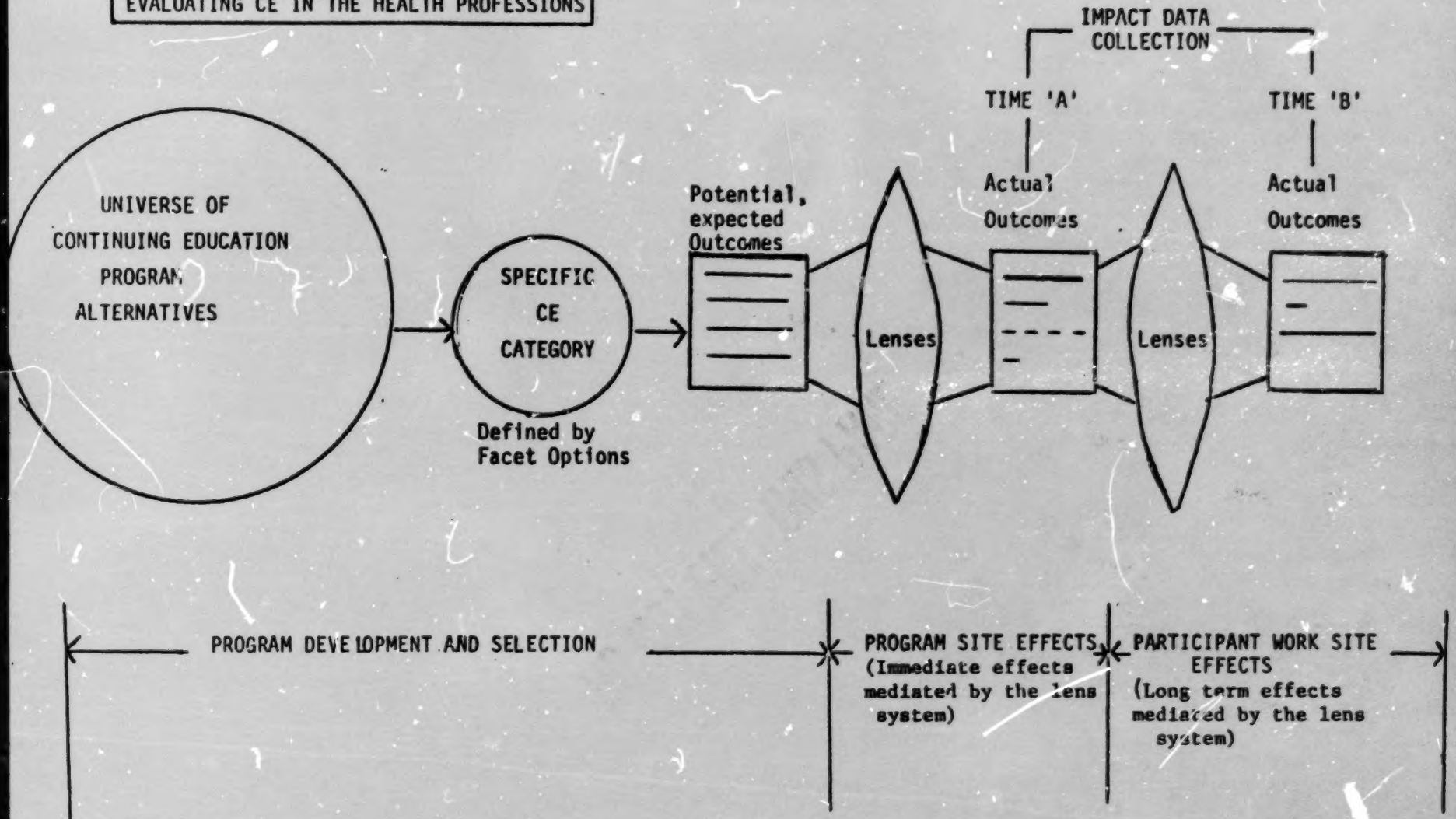

Figure 4: Physical Assessment Skills Course Outcome Data

| Expected Potential Outcomes[a] | Nurse A | | Nurse B | |
|---|---|---|---|---|
| | Program Site Effects | Work Site Effects | Program Site Effects | Work Site Effects |
| Positive attitude toward performance of physical assessment | +++[b] | +++ | +++ | ++ |
| Positive feelings toward self for attending | +++ | ++ | +++ | + |
| Collegial support | +++ | +++ | +++ | +/0 |
| Increased knowledge of physical assessment techniques | +++ | ++ | +++ | + |
| Correctly use physical assessment skills | +++ | ++ | ++ | 0 |
| Motivated to learn more about physical assessment | +++ | +++ | ++ | +/0 |
| Provide improved health/ patient care | 0 | ++ | 0 | 0 |

[a] Suggested by the analytical category in which this course is classified.

[b] Observed and measured effects: + = present, 0 = not present

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